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Attachment to:

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MEMORANDUM FOR: Chief, Technical Services Group, NPIC
ATTENTION : Chief, Technical Operations Staff,
NPIC/TSG
SUBJECT : NPIC/TSG/RED Monthly Report for
August 1972

SIGNIFICANT ITEMS OF INTEREST FOR AUGUST 1972:

1. Ground Coverage Display [] The Phase
I report has been delivered by [] and is being evaluated
by [] Phase II will not commence until
system-evaluation-criteria weighting factors have been
agreed upon by [] committee personnel.

2. Automated Image Assessment [] This project has
been delayed slightly awaiting delivery of [] imagery
from NPIC. We are currently evaluating imagery []
by [] RADC. If the resulting quality is
good enough, we will use this equipment for generating the
test imagery.

3. [] Mensuration Parameters Data Storage []
Work is progressing as planned. A sub-contract was let to
[] to investigate the feasibility and cost of []

Declass Review by NIMA/DOD

NRO review(s) completed.

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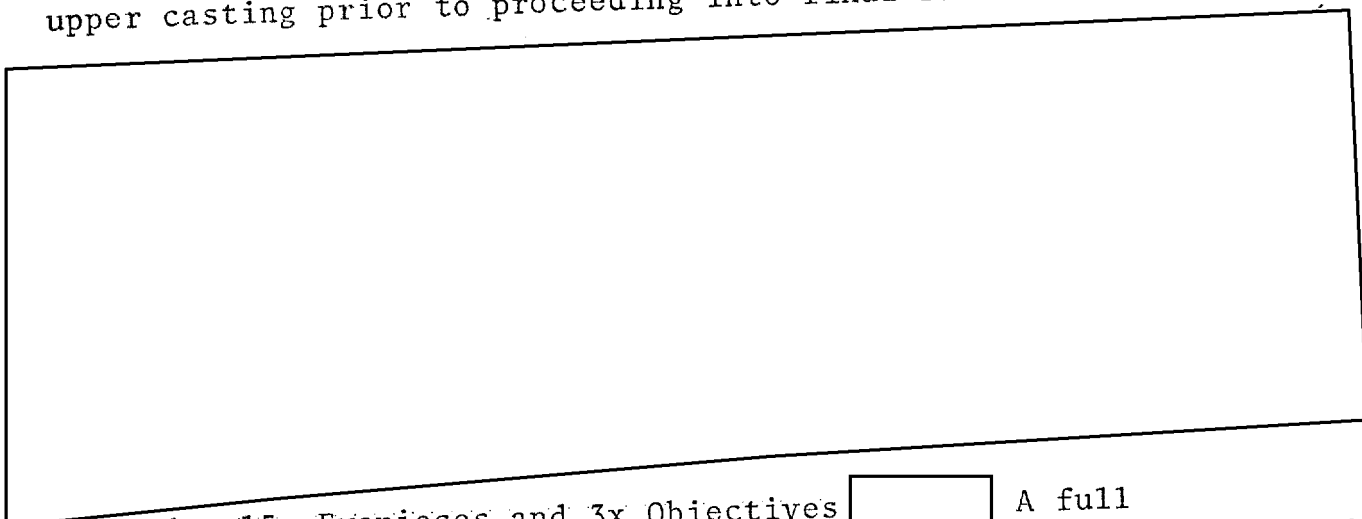
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4. Wide-Field Microstereoscope Resolution

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readings were taken on a bench set-up to determine whether specified optical performance had been achieved (last milestone before final assembly). Resolution off-axis was below specification; therefore, the contractor was instructed to align one complete optical path using the recently completed upper casting prior to proceeding into final fabrication.

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6. 15x Eyepieces and 3x Objectives A full

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dress design review was held at NPIC on the development of a 120x capability for the Zoom 240 Stereoscope. The 15x eyepiece will have lower distortion, greater eye relief and the same field-of-view when compared to the present 10x eyepiece. It also appears that the 3x stereo and mono objectives can be made near parfocal so that it will be unnecessary to remove the stereo objectives while viewing

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in mono. Additional plans are underway to design a 15x
eyepiece for the older style Zoom 240's []

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[] which have eyepiece tubes too short to accept
the present 15x design.

7. High Intensity Light Source (HILS) [] The
HILS passed preacceptance tests at the contractor's plant.
It was delivered to NPIC on 28 August and turned over to
TSG/ESD for test and evaluation.

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8. DI-8 [] Light Table [] TSG/RED and DIA
personnel performed preacceptance tests on this table at

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[] The table will be delivered to the DIA

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spaces [] early in September. TSG/RED and
DIA will perform preliminary tests prior to turning the
table over to TSG/ESD in mid-September.

9. Dry Color Film Development [] New sensitizing
dyes were recently found which give nearly complete color
sensitivity separation between the blue and green layers
and excellent separation between the green and red layers.

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10. Scan Search PI Station (SSPIS) [] The automatic
scan modification to the SSPIS has been completed. TSG/ESD
is presently testing this modification and the SSPIS will be
installed in IEG in mid-September for operational suitability
tests.

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11. Binocular Magnifier [] The contractor []

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[] demonstrated a revised mockup of this instrument to a group from NPIC. Agreement was reached on mechanical design of the prism housing, support base, and IPD adjustments. Safety and storage considerations for using this instrument on the [] light table were also discussed.

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12. Image Comparison Microstereoscope (ICM) []

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TSG/ESD has completed the tests on the ICM and the instrument is being utilized in TSG/APSD. Results of the tests are being evaluated for final inputs to the specifications for the production version.

13. Diagnostic Computer Program for HPSC []

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[] spent six days checking out the calibration program on the HPSC. An error of 10-20 micrometers over a distance of 12 centimeters was found. This could be due to round-off error in the computer or to shrinkage of the [] base film. Preliminary tests with glass plates indicate an error of only 1-2 micrometers over the same distance. However, calculations based on room temperature and humidity variations show that the discrepancy is too large to attribute solely to film base shrinkage. Further investigation is proceeding with the assistance of IEG/PHD.

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14. Optical Filters and Holograms [redacted] visited [redacted] and witnessed a significant advancement in "real-time" optical filter and hologram generation. [redacted] also briefed on their small in-house effort in pattern recognition and their use of the "RBV" in tactical photo interpretation.

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15. Improved DIM Capability. The [redacted] Computer Display Terminal was received [redacted] and is presently being used by TSG/RED and PSG/AID personnel in the development of the new DIM software package. The [redacted] high speed arithmetic unit for the [redacted] computer was also received and installed.

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16. Imagery Interpretation Research [redacted]
a. The evaluation of the IEG SALT rating scale has almost been completed [redacted]. Computer statistical analysis is completed and the report on this task will be delivered in September.

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b. [redacted] administered the fifth peripheral acuity test to the sixteen IEG PI's. This testing program is continuing to go well.

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c. Construction was started on a PI Search Test using [] imagery. This test will be used to evaluate the [] Search Improvement Course.

d. A preliminary [] report on the Wide Field Microstereoscope was received.

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e. The final report on a consultation task to set design specifications for light table focus controls was received.

f. The TSG/SIS/RED [] contracts have become the first NPIC contracts to have all their technical documents put on microfiche. Almost 200 documents have been reduced to microfiche form and are filed into an area half the size of a shoe box.

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17. Narrowband Color Viewer. A proposed program to evaluate the concept of narrowband illumination as related to the exploitation of color photography was completed during the reporting period. The program is intended to generate necessary and sufficient data for Center management to decide upon the further development of the narrowband illumination concept.

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MEETINGS, BRIEFINGS, ETC.:

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[REDACTED] RED briefed [REDACTED]

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[REDACTED] on 8 August

1972 on techniques of chemical and optical processing of
images and other data.

TRAINING:

The Color Training Course was given [REDACTED]

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[REDACTED] on 28-31 August. An excellent turn-out

for both the lecture and laboratory sessions made this one
of the most successful in-house courses given in a technical
area.

PROPOSALS APPROVED AND RECEIVED:

1. A development objective has been prepared for a PI
Stage Reticle. Proposals are due in NPIC by the end of
September.

2. A development objective is being prepared for
Investigation into High Resolution Printing Techniques. A
preliminary copy is being circulated for comments.

3. A proposal has been received from [REDACTED] for
a revised version of the Optical Equipment Test Kit.

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PERSONNEL:

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SIGNIFICANT ITEMS OF INTEREST FOR SEPTEMBER 1972:

The TID will be moved from Room 2N806 to 2N147.

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Deputy/Chief
Research & Engineering Division
NPIC/TSG

Distribution:

Original & 1 - NPIC/TSG
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